



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/646,249      | 08/22/2003  | Ari Eiriksson        | 16-334              | 9414             |

7590 09/15/2005

WATTS HOFFMANN CO., L.P.A.  
P.O. Box 99839  
Cleveland, OH 44199-0839

|          |
|----------|
| EXAMINER |
|----------|

KACKAR, RAM N

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1763

DATE MAILED: 09/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/646,249

Applicant(s)

EIRIKSSON ET AL

Examiner

Ram N. Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) 11-13 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-10 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 14/26/2003 12/1/03  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 11-13, drawn to a method, classified in class 427, subclass 585.
  - II. Claims 1-10 drawn to an apparatus, classified in class 118, subclass 725.
2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus could be used for etching, heat treatment or deposition on both surfaces.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Ms. Jennifer Nock Hinton on 9/2/2005 a provisional election was made with traverse to prosecute the invention of Group II, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-13 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

Art Unit: 1763

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 recites the limitation "support ring" in line 6. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1, 3-6 are rejected under 35 U.S.C. 102(b) as being anticipated by**

**Granneman et al (US 6183565).**

Granneman et al disclose an apparatus for supporting a thin planer workpiece (Fig 1) comprising a plenum in fluid communication with a gas supply (14) and comprise a workpiece support flange having an inner diameter slightly smaller (the edge where slope 13 ends) than a substrate so that when gas is supplied to the plenum the inner diameter and substrate define a

Art Unit: 1763

flow path for gas to flow when the wafer lifts. Granneman further discloses a wall line locating structure (13) which helps to control the lateral position of the substrate (Col 5 lines 3-7), and lift pins to lift the workpiece above the support flange when the flange is moved to loading position (11).

**9. Claim 8 is rejected under 35 U.S.C. 102(a) as being anticipated by Gerhard Karl Strauch (WO 02/101806).**

Strauch disclose an apparatus for supporting a thin planer workpiece (Fig 1) comprising a plenum in fluid communication with a gas supply (7) and comprise a workpiece support flange (3) having an inner diameter smaller than a substrate, locating structure (above the ring 10) which helps to control the lateral position of the substrate, wafer edge ring (10) having inner diameter smaller than the substrate and outer diameter larger than substrate so that when gas is supplied to the plenum the support flange and edge ring coact to define a flow path for gas to flow when the wafer lifts.

**10. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Hiroki Okazaki (JP 2002190715).**

Hiroki Okazaki disclose an apparatus for supporting a thin planer workpiece (Fig 1-Fig 3) comprising a plenum in fluid communication with a gas supply (11) and comprise a workpiece support flange (1) having an inner diameter (10) smaller than a substrate, locating structure (4) which helps to control the lateral position of the substrate, wafer edge ring (13) having inner diameter smaller than the substrate and outer diameter larger than substrate so that when gas is

Art Unit: 1763

supplied to the plenum the support flange and edge ring coact to define a flow path for gas to flow when the wafer lifts.

***Claim Rejections - 35 USC § 103***

11 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**12. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Granneman et al (US 6183565) in view of Gerhard Karl Strauch (WO 02/101806)**

Granneman et al disclose an apparatus for supporting a thin planer workpiece (Fig 1) comprising a plenum in fluid communication with a gas supply (14) and comprise a workpiece support flange having an inner diameter slightly smaller (the edge where slope 13 ends) than a substrate so that when gas is supplied to the plenum the inner diameter and substrate define a flow path for gas to flow when the wafer lifts. Granneman further discloses a wall line locating structure (13), which helps to control the lateral position of the substrate (Col 5 lines 3-7), and lift pins to lift the workpiece above the support flange when the flange is moved to loading position (11).

Granneman et al do not disclose an edge ring that rests on the support flange and contacts an outer edge of the workpiece.

Art Unit: 1763

Strauch disclose an apparatus for supporting a thin planer workpiece (Fig 1) comprising a workpiece support flange and a wafer edge ring (10) having inner diameter smaller than the substrate and outer diameter larger than substrate. Strauch teach that the edge ring is helpful in setting a gap between the substrate and the support flange (paragraph 11 from English language equivalent – US 2004/0168639).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have an edge ring on the support flange in order to keep a minimum distance between the support flange and substrate for temperature control.

**13. Claim7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Granneman et al (US 6183565) in view of Anderson et al (US Pub 2003/0178145).**

Granneman et al disclose an apparatus for supporting a thin planer workpiece (Fig 1) comprising a plenum in fluid communication with a gas supply (14) and comprise a workpiece support flange having an inner diameter slightly smaller (the edge where slope 13 ends) than a substrate so that when gas is supplied to the plenum the inner diameter and substrate define a flow path for gas to flow when the wafer lifts. Granneman further discloses a wall line locating structure (13), which helps to control the lateral position of the substrate (Col 5 lines 3-7), and lift pins to lift the workpiece above the support flange when the flange is moved to loading position (11).

Granneman et al do not disclose that the distal end of the pin seals the hole when down in the hole.

Art Unit: 1763

Anderson et al disclose a structure of the pinhead, which fits in the hole to provide a seal (Fig 2A and Paragraph 14).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have a seal for the lift pin to have the processing gases not enter the pin hole to avoid undesired deposition.

**14. Claims 9 and 10 are is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerhard Karl Strauch (WO 02/101806) in view of Granneman et al (US 6183565).**

Strauch disclose an apparatus for supporting a thin planer workpiece (Fig 1) comprising a plenum in fluid communication with a gas supply (7) and comprise a workpiece support flange (3) having an inner diameter smaller than a substrate, locating structure (above the ring 10) which helps to control the lateral position of the substrate, wafer edge ring (10) having inner diameter smaller than the substrate and outer diameter larger than substrate so that when gas is supplied to the plenum the support flange and edge ring coact to define a flow path for gas to flow when the wafer lifts.

Strauch does not disclose pins to lift the substrate for load/unload.

Granneman et al disclose an apparatus for supporting a thin planer workpiece (Fig 1) comprising a plenum in fluid communication with a gas supply (14) and comprise a workpiece support flange and lift pins to lift the workpiece above the support flange when the flange is moved to loading position (11).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have lift pins in apparatus of Strauch in order to have a transfer mechanism do load/unload of the substrate.



Art Unit: 1763

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar  
Examiner AU 1763